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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/006,063	12/06/2001	Kevin P. Baker	GNE.2830P1C3	8559

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EXAMINER	
HAMUD, FOZIA M	

ART UNIT	PAPER NUMBER
1647	

DATE MAILED: 05/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/006,063	BAKER ET AL.	
	Examiner	Art Unit	
	Fozia M Hamud	1647	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 March 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *28-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *28-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's preliminary amendment canceling claims 1-27 and adding new claims 28-40, filed on 06 December 2001 is acknowledged.

Thus claims 28-40 are pending and under consideration.

2. ***Priority:***

2a. Based on the information given by Applicants and an inspection of the patent applications, the Examiner has concluded that the subject matter defined in this application is not supported by the disclosure in application serial no. 09/946,374 filed on 04 September 2001, because, although the polypeptide of SEQ ID NO:77 (PRO1293) and the nucleic acid encoding said PRO1293 polypeptide, are disclosed in application 09/964,374, none of the parent applications provide a specific and substantial asserted utility or a well established utility for the claimed invention. Accordingly, the subject matter defined in claims 28-40, is afforded an effective filing date of 06 December 2001, which is the filing date of the current application.

Should the applicant disagree with the examiner's factual determination above, it is incumbent upon the applicant to provide the serial number and specific page number(s) of any parent application filed prior to 12/06/01, which specifically supports the particular claim limitation for each and every claim limitation in all the pending claims which applicant considers to have been in possession of and fully enabled for prior to 12/06/01.

Information Disclosure Statement:

3a. The information disclosure statements filed 08 November 2003 and 03 September 2003, fail to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because they fail to identify each reference by author and publication date. The references have been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609 C(1).

4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections under 35 U.S.C. §101/112:

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 28-40 are rejected under 35 U.S.C. §101, because the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility.

Claims 28-40 of the instant invention are directed to an isolated polypeptide comprising the amino acid sequence set forth in SEQ ID NO:77. The specification designates the polypeptide of SEQ ID NO:77, as "PRO1293", and describes it as having homology to an immunoglobulin heavy chain variable region protein, (page 79, lines 36-40). The PRO1293 polypeptide is described as having a signal sequence, N-glycosylation site, transmembrane domain, cell attachment sequence and Coproporphyrinogen 111 oxidase proteins, (see figure 46). However, besides these structural characterizations, the specification does not disclose any information regarding physiologic activity or functional characteristics of the PRO1293 polypeptide. The specification asserts that the PRO1293 gene encoding the PRO1293 polypeptide is amplified in the genome of certain human lung, colon and/or breast cancers and/or cell lines, (Example 143, on page 494 line 20, and table 8 on page 503). Applicants assert that gene amplification is associated with over-expression of the gene product, indicating that the polypeptides are useful targets for therapeutic intervention in certain cancers such as colon, lung and breast and other cancers, (page 494, lines 20-25). However, instant specification does not demonstrate that the PRO1293 polypeptide is actually overly expressed in any of the cancers mentioned. Applicants have not shown that there is a relationship between protein expression and the over-expression of the gene.

The data in the instant specification shows that gene copy number is increased in certain tumor tissue samples, however, it does not necessarily follow that an increase in gene copy number results in increased gene expression and increased protein expression, such that "all possible" nucleic acids encoding the polypeptide of SEQ ID NO:263, or those that encode variants of the polypeptide of SEQ ID NO:263, would be useful diagnostically or as target for cancer drug development. For example, Pennica et al, (1998, PNAS USA 95:14717-14722) discloses that,

> "An analysis of WISP-1 gene amplification in human colon tumors showed a correlation between DNA amplification and over expression, whereas, over expression of WISP-3 RNA was seen in the absence of DNA amplification. In contract, WISP-2 DNA was amplified in the colon tumors, but mRNA expression was significantly reduced in the majority of tumors compared with the expression in normal colonic mucosa from the same patient", see page 14722, second paragraph of column 1; pages 14720-14721.

Therefore, the protein levels cannot be accurately predicted from the level of the corresponding gene.

Accordingly, since the instant specification provides no information regarding the physiological significance, functional characteristics or any conditions that involve the polypeptide of SEQ ID NO:77, (PRO1293 polypeptide), the PRO1293 polypeptide, lacks specific and substantial asserted utility or a well established utility.

5b. Claims 28-40 are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a substantially asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention. No biological activity was assayed or determined for the PRO1293 polypeptide. Although the specification

describes the structure of the PRO1293 polypeptide, it fails to provide any information regarding biological activity or physiological characterization of said polypeptide. Therefore, the skilled artisan would not know how the claimed polypeptide.

Should Applicants establish an activity for the polypeptide of SEQ ID NO: 77, instant specification would still fail to adequately enable an isolated polypeptide comprising an amino acid sequence that is at least 80%, 85%, 90%, 95% or 99% to the polypeptide of SEQ ID NO:77. Claims 28-32 are drawn to a polypeptide having at least 80%, 85%, 90%, 95% or 99% sequence identity with a particular disclosed sequence. The specification does not provide any particular conserved structure, or other distinguishing features which would enable a polypeptide having at least 80%, 85%, 90%, 95% or 99% to the polypeptide of SEQ ID NO:77 that would retain the activity of the polypeptide of SEQ ID NO:77. Thus, the claims are drawn to a genus of polypeptides that is defined only by sequence identity. Due to the large quantity of experimentation necessary to determine all the polypeptides comprising an amino acid sequence that is at least 80%, 85%, 90%, 95% or 99% identical to the polypeptide of SEQ ID NO:77, and to screen an activity/property for them, the lack of direction/guidance presented in the specification regarding which variants of the polypeptide of SEQ ID NO:77 would retain the desired activity, the complex nature of the invention, the absence of working examples directed to variants of the polypeptide of SEQ ID NO:77, the complex nature of the invention, the state of the prior art establishing that biological activity cannot be predicted based on structural similarity, the unpredictability of the effects of mutation on the structure and function of the

claimed polypeptide, and the breadth of the claims which fail to recite particular biological activities, undue experimentation would be required of the skilled artisan to make and/or use the claimed invention in its full scope.

4c. Claims 28-32 are also rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

The claims are directed to a polypeptide having at least 80%, 85%, 90%, 95%, 99% sequence identity to a the polypeptide of SEQ ID NO: 77, or the polypeptide of SEQ ID NO; 77 lacking its associated signal peptide.

However, the specification teaches only the structure of the polypeptide of SEQ IDNO: 77. The specification does not teach functional or structural characteristics of all the claimed polypeptides. The description of one PRO polypeptide (SEQ ID NO: 77) is not adequate written description of an entire genus of functionally equivalent polypeptides. To provide adequate written description and evidence of possession of a claimed genus, the specification must provide sufficient distinguishing identifying characteristics of the genus. The factors to be considered include disclosure of compete or partial structure, physical and/or chemical properties, functional characteristics, structure/function correlation, methods of making the claimed product, or any combination thereof. In this case, the only factor present in the claim is a partial structure in the form of a recitation of percent identity. There is not even identification of any particular portion of the structure that must be conserved. Accordingly, in the

absence of sufficient recitation of distinguishing identifying characteristics, the specification does not provide adequate written description of the claimed genus.

Vas-Cath Inc. v. Mahurkar, 19USPQ2d 1111, clearly states "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention. The invention is, for purposes of the 'written description' inquiry, whatever is now claimed." (See page 1117.) The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." (See Vas-Cath at page 1116). As discussed above, the skilled artisan cannot envision the detailed chemical structure of the encompassed genus of polypeptides, and therefore conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method of isolation. Adequate written description requires more than a mere statement that it is part of the invention and reference to a potential method of isolating it. The compound itself is required.

Therefore, only the isolated polypeptide comprising the amino acid sequence set forth in SEQ ID NO: 77, but not the full breadth of the claims meet the written description provision of 35 U.S.C. §112, first paragraph.

Claim Rejections - 35 U.S.C. §102:

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6a. Claims 27-40 are rejected under U.S.C. § 102 (a) as being anticipated by Botstein et al (WO2000053751; published 14 September 2000) and Baker et al (WO200012708; published on 09 March 2000).

Both of the above references disclose an isolated polypeptide that shares 100% homology to the polypeptide of SEQ ID NO:77 of the instant application. (See attached copies of the comparison of SEQ ID NO:77 of the instant invention and the sequence of the reference (SEQUENCE COMPARISON 'A' and "B"). Regarding claim 38, it is understood that the deposited sequence encodes the polypeptide of SEQ ID NO:77, therefore, since the polypeptide disclosed by each of the above references shares 100% identity to the polypeptide of SEQ ID NO:77, these references also anticipate claim 38. With respect to claims 39 and 40, each of the cited references also discloses a chimeric or fusion protein comprising its polypeptide and a heterologous polypeptide, (see claims 15 and 16). With respect to claims 35-37, the cited references also disclose the polypeptides recited in instant claims 35-37, (see claims 24-26 of WO200012708).

Therefore, since the above cited references meet all the limitations recited in claims 28-40, the references anticipate the instant claims 28-40 in the absence of any evidence to the contrary.

Conclusion:

6. No claim is allowed.

Advisory Information:

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fozia M Hamud whose telephone number is (571) 272-

0884. The examiner can normally be reached on Monday, Thursday-Friday, 6:00 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary L Kunz can be reached on (571) 272-0887. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Fozia Hamud
Patent Examiner
Art Unit 1647
07 May 2004

JANET ANDRES
PATENT EXAMINER